

Construction Core

Developed by:

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CONSTRUCTION CORE

COURSE DESCRIPTION

***Construction Core* is a course that will introduce students to basic skills and knowledge applicable to all construction trades. Topics covered include safety, construction drawings, site layout, hand and power tools, linear and angular measurements, and application of algebraic and geometric principles to construction problems.**

Prerequisite(s): None

Note: Career Management Success is required as a part of the Trade and Industrial Education student's concentrator sequence or technical path in the Manufacturing, Construction, and Transportation sub-clusters.

Recommended Credits: 1 with a minimum of 72.5 hours dedicated to the *Construction Core* curriculum to meet National Center for Construction Education and Research standards and the Tennessee Department of Education

Recommended Grade Level(s): 10th

CONSTRUCTION CORE STANDARDS

- 1.0 Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.
- 2.0 Students will identify and demonstrate basic principles of safety procedures used in the construction industry.
- 3.0 Students will interpret drawings and written specifications and relate them to the construction layout.
- 4.0 Students will trace the growth and development of the construction industry.
- 5.0 Students will evaluate career opportunities and career paths within the construction industry.
- 6.0 Students will identify, select, inspect, safely use, maintain, and store hand tools.
- 7.0 Students will identify, select, inspect, safely use, maintain, and store power tools.
- 8.0 Students will make and lay out linear and angular measurements.
- 9.0 Students will transfer mathematics concepts to solve problems encountered in the construction industry.
- 10.0 Students will rig and move materials and equipment.
- 11.0 Students will demonstrate proficiency in creating two- and three-dimensional scale drawings.

Suggested time for implementing Construction Core standards

CONSTRUCTION CORE STANDARDS	Hour for Standard ½ Credit Class	Hour for Standard 1 Credit Class
1.0 Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.	5.5	11
2.0 Students will identify and demonstrate basic principles of safety procedures used in the construction industry.	7.5	15
3.0 Students will interpret drawings and written specifications and relate them to the construction layout.	5	10
4.0 Students will trace the growth and development of the construction industry.	4	8
5.0 Students will evaluate career opportunities and career paths within the construction industry.	2.5	5
6.0 Students will identify, select, inspect, safely use, maintain, and store hand tools.	9	18
7.0 Students will identify, select, inspect, safely use, maintain, and store power tools.	9	18
8.0 Students will make and lay out linear and angular measurements.	7.5	15
9.0 Students will transfer mathematics concepts to solve problems encountered in the construction industry.	7.5	15
10. Students will rig and move materials and equipment.	7.5	10
11. Students will demonstrate proficiency in creating two- and three-dimensional scale drawings.	7.5	10
Total Hours	72.5	135

CONSTRUCTION CORE (Additional Resources)

1.0 Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>Tools for Success – Soft Skills for the Construction Industry</i>	Cultivate leadership skills by taking initiative in meetings to actively influence the results of deliberations, use critical-thinking and consensus building, and apply high ethical standards to personal, community, and professional situations.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	1.1A, 1.1B, 1.2A, 1.2B, 1.3A, 1.3B, 1.4A, 1.4B
Text	<i>Professional Development Program</i>	Leadership and Leadership Development Skills	SkillsUSA-VICA P.O. Box 3000; Leesburg, VA 22075; (703) 777-8810 www.skillsusa.org/index.html	1.1A, 1.1B, 1.2A, 1.2B, 1.3A, 1.3B, 1.4A, 1.4B
Text	<i>Career Choices</i>		Author: Bingham and Stryker; Publisher: Academic Innovations	

CONSTRUCTION CORE (Additional Resources)

2.0 Students will identify and demonstrate basic principles of safety procedures used in the construction industry.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 000101	Explain the role of safety in the construction crafts, describe what job-site safety means, explain the appropriate safety precautions around job-site hazards, follow safe procedures for lifting, describe fire prevention and fire fighting techniques, and define safe work procedures around electrical hazards.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870, ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	2.3A, 2.3B, 2.3C, 2.3D, 2.4A, 2.4B, 2.5A, 2.5B, 2.6A, 2.6B, 2.7A, 2.7B, 2.7C, 2.8A, 2.8B
Text	<i>Occupational Safety and Health Standards for the Construction Industry</i> , Latest Edition	U.S. Government Safety and Health Administration Standards	Washington, DC; Occupational Safety and Health Administration, U.S. Department of Labor, U.S. Government Printing Office, United States Department of Labor, Occupational Safety and Health Administration Home Page, http://www.osha.gov/	2.2A, 2.3B, 2.3C, 2.3D, 2.4B, 2.5A, 2.5B, 2.6C, 2.7A, 2.7B, 2.8C
Video	MAVCC Safety Training	Computer-Based Safety Training & Safety Training Videos Safety behavior and attitude are emphasized.	MAVCC; 1500 West Seventh Ave; Stillwater, OK 74074 1-800-654-3988; 405-743-5578; 405-743-5254 Fax www.mavcc.com	2.1A, 2.1B, 2.1C, 2.2A, 2.3A, 2.3B, 2.3C, 2.3D, 2.4A, 2.6A, 2.6B, 2.8A, 2.8B
Text	<i>Construction Site Safety Technician: Participant Manual</i> , 1998 Edition	Activity based manual covering all basics of construction safety practices	Gainesville, FL; NCCER; University of Florida Press	2.3A, 2.3B, 2.3C, 2.3D, 2.4A, 2.4B, 2.5A, 2.5B, 2.6A, 2.6B, 2.7A, 2.7B, 2.7C, 2.8A, 2.8B

CONSTRUCTION CORE (Additional Resources)

3.0 Students will interpret drawings and written specifications and relate them to the construction layout.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 00105 - 00	Recognize and identify basic blueprint terms, components, and symbols. Relate information on blueprints to actual locations on the print. Recognize different classifications of drawings. Interpret and use drawing dimensions.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870, ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	3.1A, 3.1C, 3.2A, 3.4A, 3.4B
Text	<i>Understanding Construction Drawings</i> , 1996 Edition	Identify common symbols, measure scale drawings, and draw a basic set of plans and make models.	Mark Huth; Albany, NY; Delmar Publishers, Inc.	3.1A, 3.1B, 3.1C, 3.2A, 3.2B, 3.2C, 3.3A, 3.4A, 3.4B
Text	<i>Blueprint Reading for the Building Trades</i> , 1989 Edition	Locate dimensions of components and overall sizes of drawings.	John Traister; Carlsbad, CA; Craftsman Book Co.	3.1A, 3.1B, 3.1C, 3.2A, 3.2B, 3.2C, 3.3A, 3.4A, 3.4B
Text	<i>Construction Technology</i> , Chapter 3 & 4	Demonstrate how to draw architectural plans and determine sizes on architectural drawings.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	3.1A, 3.1B, 3.1C, 3.2A, 3.2B, 3.2C, 3.3A, 3.4A, 3.4B
Text	<i>Reading Architectural Plans for Residential and Commercial Construction</i> , 1998 Edition	Covers plan reading in detail with a heavy emphasis on commercial construction.	Ernest R. Weidhaas; Englewood Cliffs, NJ; Prentice Hall Career & Technology	3.1A, 3.1B, 3.1C, 3.2A, 3.2B, 3.2C, 3.3A, 3.4A, 3.4B

CONSTRUCTION CORE (Additional Resources)

4.0 Students will trace the growth and development of the construction industry.

Type	Names of Item	Description	Publisher/Author	Construction Core Sub Standards Covered
Text	<i>Construction Technology</i> , Chapter 1	Discusses the importance of technological advancement in areas related to the construction industry, and recognizes how the economy affects the construction industry.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	4.1A, 4.1B, 4.2A, 4.3B
Text	<i>Construction Systems</i> Chap. 2, Pages 21 - 27		Author: Polette, Landers Publisher: Goodheart Wilcox	4.1.B, 4.2.B, 4.3.B
Text	<i>Modern Marvels Power Plants</i> (The history and development of electricity)	(The history and development of electricity)	VHS 50 minutes Catalog # AAE-43060 History Channel 126 5 th Ave. New York, NY 10011	4.1.A, 4.1.B,
Video	<i>Building Big</i>	Video series traces the history and construction of dams, tunnels, bridges, domes, and skyscrapers.	WGBH TV Boston Video 800 949-8670	4.1.A, 4.1.B, 4.2.A, 4.3.A, 4.3.B
Text	<i>Exploring Construction</i> , Unit 1, Pages 7 – 17		Author: Richard Henak Publisher: Goodheart Wilcox	

CONSTRUCTION CORE (Additional Resources)

5.0 Students will evaluate career opportunities and career paths within the construction industry.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>Modern Carpentry</i> Unit 25	Opportunities in carpentry as a career	Willis H. Wagner; Goodheart-Wilcox Company, Inc. State Textbook Adoption List	5.1, 5.3A, 5.4,
Text	<i>Construction Technology</i> , Chapter 1	Lists and details the criteria for construction personnel	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	5.1, 5.2A, 5.2B, 5.3A, 5.4
Text	<i>Carpentry and Building Construction</i> , Pages 1-7		Authors: Feirer, Hutchings, Feirer Publisher: Glencoe McGraw Hill	
Video	Video: <i>Build Your Future</i> (30 minutes)	An informational video highlighting careers in the construction field	NCCER Education and Research PO Box 141104 Gainesville, FL 32614-1104 www.nccer.org	5.1, 5.2.A, 5.2.B, 5.3.A, 5.3.B, 5.4
Text	<i>Career Choices</i> , Chapters 5 & 6, Pages 123-166		Author: Bingham and Stryker Publisher: Academic Innovations	5.4

CONSTRUCTION CORE (Additional Resources)

5.0 Students will evaluate career opportunities and career paths within the construction industry.

CD-ROM	<i>Careers In Construction Trades</i>	An interactive CD-ROM that introduces students to several occupations in the construction industry	Cat # FLR20434 Meridian Education Corporation	All sub standards
Text	<i>Modern Carpentry</i> , Chapter 30, Pages 729-739		Author: Wagner and Smith Publisher: Goodheart Wilcox State Textbook Adoption List	
Web site	<i>Building and Construction Careers</i>	A web site dedicated to construction careers	www.construction-training.net.au	

CONSTRUCTION CORE (Additional Resources)

6.0 Students will identify, select, inspect, safely use, maintain, and store hand tools.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 0001, 00103	The text describes safety procedures and practices, explains the role of safety in the construction crafts, describes what job-site safety means, and demonstrates the use and care of appropriate personal protective equipment. Text identifies commonly used hand tools of the construction trade, safe use of these tools, and proper hand tool maintenance.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	6.1A, 6.1B, 6.1C, 6.1D, 6.2A, 6.2B, 6.2C, 6.2D, 6.2E
Text	<i>Construction Technology</i> , Chapter 9 & 10	Identify the most outstanding features of the hand tools listed and define key terms.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	6.1A, 6.1C, 6.1D, 6.2A, 6.2B, 6.2C, 6.2D, 6.2E, 6.4C, 6.4D
Text	<i>Modern Carpentry</i> Unit 2	Totally covers safe operating practices for standard carpentry tools.	Willis H. Wagner; Goodheart-Wilcox Company, Inc. State Textbook Adoption List	6.1A, 6.1B, 6.1C, 6.1D, 6.2A, 6.2B, 6.2C, 6.2D, 6.2E, 6.2F, 6.4A, 6.4B, 6.4C, 6.5A, 6.5B, 6.5C
Video	MAVCC Safety Training	Computer-Based Safety Training & Safety Training Videos Safety behavior and attitude is emphasized.	MAVCC 1500 West Seventh Ave Stillwater, OK 74074 1-800-654-3988; (405) 743-5578 (405) 743-5254 Fax; wwwmavcc.com	6.1C, 6.2C, 6.3C, 6.4C, 6.5C, 6.6C

CONSTRUCTION CORE (Additional Resources)

6.0 Students will identify, select, inspect, safely use, maintain, and store hand tools.

Teacher Guide	<i>Core Curriculum Instructors Guide</i> 3-1 through 3-68, and workbook	A comprehensive curriculum guide and student workbook	NCCER Publisher: Prentice Hall State Textbook Adoption List	Covers all sub standards
Text	<i>Carpentry and Building Construction</i> Pages 109-121	Text book for residential construction trades	Author: Feirer, Hutchings, Feirer Publisher: Glencoe McGraw Hill State Textbook Adoption List	6.1.A, 6.1.C, 6.1.D, 6.2.A, 6.2.C, 6.3.A, 6.3.C, 6.4.A, 6.6.A, 6.6.C, 6.6.D,
Text	<i>Construction Technology</i> Chapters 9, 10, 11; Pages 136-151, 152-161, 162-173	Text book for residential and commercial construction trades	Author: Mark Huth Publisher: Glencoe, McGraw Hill 3 rd edition State Textbook Adoption List	6.1.A, 6.1.C, 6.1.D, 6.2.A, 6.2.C, 6.3.A, 6.3.C, 6.4.A, 6.6.A, 6.6.C, 6.6.D,
Text	<i>Modern Carpentry</i> Chapter 3 Pages 55-75	Text book for residential construction trades	Author: Wagner, Smith Publisher: Goodheart Wilcox State Textbook Adoption List	6.1.A, 6.1.C, 6.1.D, 6.2.A, 6.2.C, 6.3.A, 6.3.C, 6.4.A, 6.6.A, 6.6.C, 6.6.D,
Video	<i>Hand Tool Safety in the Workplace</i>	A 30-minute video containing information on 100 uses and abuses of hand tools	Hand Tool Institute (HTI) (914) 332-0040 www.hti.org/	Covers all sub standards
Text	<i>Steel Square</i> , Second Edition	An informative book containing detailed illustrations on the many uses of the steel square (framing-carpenters square)	Author: Gilbert Townsend	6.4.A, 6.4.B, 6.4.C,

CONSTRUCTION CORE (Additional Resources)

7.0 Students will identify, select, inspect, safely use, maintain, and store power tools.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 0001, 00104	The text describes safety procedures and practices, explains the role of safety in the construction crafts, describes the meaning of job-site safety, and demonstrates the use and care of appropriate personal protective equipment. Text identifies commonly used power tools of the construction trade, safe use of power tools, and proper power tool maintenance.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	7, 7.1C, 7.1D, 7.2A, 7.2B 7.2C, 7.2D, 7.2E
Text	<i>Construction Technology</i> , Chapter 12	Identify the most outstanding features of the power tools listed and define key terms.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	7.1A, 7.1B, 7.2F, 7.4A, 7.4B, 7.4C, 7.4D
Text	<i>Modern Carpentry</i> Unit 3	Totally covers safe operating practices for standard carpentry tools.	Willis H. Wagner; Goodheart-Wilcox Company, Inc. State Textbook Adoption List	7.2B, 7.2C, 7.2D, 7.2E, 7.2F
Video	MAVCC Safety Training	Computer-based safety training & safety training videos Safety behavior and attitude are emphasized.	MAVCC 1500 West Seventh Ave Stillwater, OK 74074 1-800-654-3988; (405) 743-5578 (405) 743-5254 Fax; wwwmavcc.com	7.1C, 7.2C, 7.3C, 7.4C, 7.5C, 7.6C

CONSTRUCTION CORE (Additional Resources)

8.0 Students will make and lay out linear and angular measurements.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Video	<i>Shopware 2001-2002</i>	Video series includes <i>The Long and Short of It: How To Take Measurements, Reading a ruler: English and Metric measurements, Reading a Ruler – English Measurements</i>	Shopware PO Box 921; Monmouth Junction, NJ 08852-0921 1-800-487-3392 1-800-900-5272 Fax	8.1A, 8.1C
Text	<i>Construction Technology, Chapters 9 & 13</i>	Describes measurement and layout tools commonly used in the construction industry. Takes accurate measurements to the smallest graduations indicated on the measuring tool being used, layout square corners and angles, and determines the levelness or plumbness of any line. Defines key terms.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	8.1A, 8.1B, 8.2A, 8.2B, 8.3A, 8.3B, 8.4A
Text	<i>Modern Carpentry Unit 4</i>	Covers the use of leveling instruments, establishing building lines, setting-up of the instruments, and horizontal graduated circles. Also covers layout and staking a house, finding grade level & contour lines.	Willis H. Wagner; Goodheart-Wilcox Company, Inc. State Textbook Adoption List	8.1A, 8.1B, 8.2A, 8.2B, 8.3B, 8.4A

CONSTRUCTION CORE (Additional Resources)

9.0 Students will transfer mathematics concepts to solve problems encountered in the construction industry.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 00102 - 00	Students will add, subtract, multiply, and divide fractions and decimals, convert decimals to percents, fractions to decimals; explain the metric system; recognize and use metric units.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	9.1A, 9.1B, 9.1C, 9.2C, 9.3A, 9.4A, 9.4B
Text	<i>All the Math You'll Ever Need</i> , 1999 Edition	Practical applications for math	Stephen Slavin; New York; John Wiley & Sons	9.1A, 9.1B, 9.1C, 9.2A, 9.4B, 9.4C
Text	<i>Calculator Math for Job and Personal Use</i> , 1992 Edition	Use the calculator to solve construction concepts.	William Pasewark and Merle Wood; Phoenix, AZ; South-Western	9.1C, 9.4B, 9.4C
Text	<i>Math to Build On, A Book for Those Who Build</i> , 1993 Edition	Math for the building industry	Johnny and Margaret Hamilton; Clinton, NC; Construction Trades Press	9.1A, 9.1B, 9.1C, 9.2A, 9.2C, 9.3A, 9.3B, 9.4B, 9.4C
Text	<i>Modern Carpentry</i> Unit 9	Principles of roof framing, calculating spans, slope, and rafter lengths.	Willis H. Wagner; Goodheart-Wilcox Company, Inc State Textbook Adoption List	9.1A, 9.2B,

CONSTRUCTION CORE (Additional Resources)

10.0 Students will rig and move materials and equipment.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 00106 - 00	Identify and describe the use of slings and common rigging hardware. Describe basic inspection techniques, basic hitch configurations, and basic load-handling safety practices. Demonstrate use of ANSI hand signals.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	10.1A, 10.1B, 10.1C, 10.1D, 10.1E, 10.2, 10.3A, 10.3B, 10.3C, 10.3D, 10.4, 10.5
Text	<i>Bob's Rigging and Crane Handbook</i> , Fourth Edition, 1996	All you ever wanted to know about cranes and rigging.	Bob De Benedictis; Boone, NC	10.1A, 10.1B, 10.2, 10.3B 10.3C, 10.5, 10.6, 10.7A, 10.7B
Text	<i>High Performance Slings and Fittings for the New Millennium</i> , 1999 Edition	Use of high performance slings in modern construction	Dennis St. Germain; Aston, PA; I & I Sling, Inc.	10.1A, 10.1B, 10.2, 10.3A, 10.4, 10.5
Text	<i>Rigging Manual</i> , 1997 Edition	Safe set-up and use of a variety of rigging techniques	Toronto, Ontario, Canada; Construction Safety Association of Ontario	10.1A, 10.1B, 10.2, 10.3A, 10.3B, 10.3C, 10.3D, 10.4, 10.5, 10.6
Text	<i>Modern Carpentry</i> Unit 24	Use of various types of scaffolding	Willis H. Wagner; Goodheart-Wilcox Company, Inc. State Textbook Adoption List	10.1B, 10.1C, 10.1D

CONSTRUCTION CORE (Additional Resources)

11.0 Students will demonstrate proficiency in creating two- and three-dimensional scale drawings.

Type	Names of Item	Description	Publisher/Author	Construction Core Standards Covered
Text	<i>NCCER Core Curriculum</i> Module 00105 - 00	Recognize and identify basic blueprint terms, components, and symbols. Relate information on blueprints to actual locations on the print. Recognize different classifications of drawings. Interpret and use drawing dimensions.	Prentice Hall Publishing One Lake Street Upper Saddle River, NJ 07458 Tel: 1-800-720-3870 ext. 2 (201) 236-732 beth-caruso@prenhall.com State Textbook Adoption List	11.1A, 11.1B, 11.1C, 11.2B, 11.3A, 11.3B, 11.4A, 11.4B
Text	<i>Understanding Construction Drawings</i> , 1996 Edition	Identify common symbols, measure scale drawings, draw a basic set of plans, and make models.	Mark Huth; Albany, NY; Delmar Publishers, Inc.	11.1B, 11.2A, 11.2B, 11.6
Text	<i>Blueprint Reading for the Building Trades</i> , 1989 Edition	Locate dimensions of components and overall sizes of drawings.	John Traister; Carlsbad, CA; Craftsman Book Co.	11.1A, 11.1B, 11.2A, 11.3A, 11.3B, 11.4A, 11.6
Text	<i>Construction Technology</i> , Chapter 3	Demonstrate how to draw architectural plans and determine sizes on architectural drawings.	Mark W. Huth; Glencoe McGraw-Hill, 3 rd Edition State Textbook Adoption List	11.1A, 11.1B, 11.1C, 11.2A, 11.2B, 11.3A, 11.6

Construction Core Integration

Standard		Construction Standards Met
ENGLISH II 1.0 Writing	The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	1,4,5
ENGLISH II 2.0 Reading	Content Standard: The student will develop the reading skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of the written text.	1,4,5
ENGLISH II 3.0 Viewing and Representing	The student will use, read, and view media/technology and analyze content and concepts accurately.	1,4,5,11
ENGLISH II 4.0 Speaking and Listening	The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening skills in the analysis and evaluation of spoken ideas.	1

References:

Tools for Success, Soft Skills for the Construction Industry

Life Strategies, How to Succeed in School and Beyond

From School to Work

Professional Development Program (PDP)

Construction Core Integration

Standard	Construction Standards Met
ALGEBRA I	
1.0 Number Sense and Number Theory	
The student will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	3,8,9,11
ALGEBRA I	
2.0 Estimation, Measurement, and Computation	
The student will apply appropriate tools and units of measurement; develop effective estimation and computation strategies for producing reasonable results; and calculate using appropriate tools, such as mental mathematics, technology, manipulatives, and pencil-and-paper.	3,8,9,11
ALGEBRA I	
3.0 Patterns, Functions, and Algebraic Thinking	
The student will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real world problem solving.	8,11
ALGEBRA I	
4.0 Statistics and Probability	
The student will collect, organize, represent, and interpret data; make inferences and predictions; present and evaluate inferences and predictions; present and evaluate arguments based on data analysis; and model situations to determine theoretical and experimental probabilities.	
ALGEBRA I	
5.0 Spatial Sense and Geometric Concepts	
The student will investigate, model, and apply geometric properties and relationships.	8,11

References

NCCER Core Curriculum, Instructor Edition and Student Workbook

Modern Carpentry

Construction Systems

Exploring Construction

Practical problems in Mathematics for Carpenters

Lifestyle Math Financial Planning Portfolio

SYLLABUS FOR CONSTRUCTION CORE – *All class times are based on 1 hour unless otherwise noted.*

Hrs.	Lessons	Description/Objectives/Activity/Resources
1	1. Intro – First Impressions: Starting Your New Job	<p>INTRO – STD 1.0 Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.</p> <p>Introduction to course – Outline and sequence – Goals, expectations, rules, etc.</p> <p>Introduce student journals – all students are required to maintain a notebook with daily-required writing activity daily (each class begins w/Word or Saying of The Day or w/Question of The Day giving students an opportunity to demonstrate problem-solving skills.</p>
1	2. What Are Employers Looking For? (Goals/Purpose of SkillsUSA-VICA)	<p><u>ACTIVITY:</u> <i>Getting to Know Your Classmates</i> - Interview someone in your work-based learning class. Use this information to introduce the person to the class.</p>
1	3. A Good Attitude: The Right Start (VICA Pledge/Creed/Motto)	<p><u>ACTIVITY:</u> Self-Assessment: How Ready Are You for your First Construction Job?</p>
1	4. Relating Personal Characteristics and Abilities to Career Goal	<p><u>ACTIVITY:</u> Making the Right Impression</p> <p><u>ACTIVITY:</u> Projecting a Good Attitude.</p> <p><u>ACTIVITY:</u> Examining the Effects of a Negative Attitude.</p> <p><u>ACTIVITY:</u> Examining the Effects of Absenteeism.</p>
1	5. Responding to Authority (Symbolism SkillsUSA-VICA)	

		CONT. – STD 1.0
1	6. How to Follow Directions	<p>Resources: SkillsUSA Leadership Handbook, PDP, PO Box 3000, Leesburg, VA 20177 "From School to Work"-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois "Applied Communication Skills for the Construction Trades"-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com "Tools for Success"-Steven A. Rigolosi, Upper Saddle River, New Columbus, Ohio .) "Basic Technical Mathematics" – C. Thomas Olivo/Thomas P. Olivo "Basic Mechanical Drawing" Joseph J. Almon, M.A.</p>
1	7. Teamwork: Are You A Team Player?	
1	8. Becoming a Team Player	<p><u>ACTIVITY:</u> Determining How Your Co-Workers See You <u>ACTIVITY:</u> Examining On-the-Job-Behavior</p>
1	9. Do's – Don'ts: Tips for Getting Along with Your Co-Workers	<p>Group Activities</p> <p><u>ACTIVITY:</u> Role-Playing Exercise: Teaching Effectively <u>ACTIVITY:</u> Getting to Know Your Co-Workers <u>ACTIVITY:</u> Building a Team</p>
1	10. Leadership/Mentoring: Teaching Others	

1	11. Managing Your Construction Career – Transferable Skills/Planning & Managing Your Career/Interviewing Skills	<p>CONT. – STD 1.0</p> <p>Websites: Associated Builders & Contractors: http://www.abc.org Associated General Contractors of America: http://www.agc.org Contractor Magazine online: http://www.contractormag.com Engineering News Record: http://www.enr.com National Center for Construction Education & Research: http://www.nccer.org Occupational Health & Safety Administration: http://www.osha.gov</p> <p>Resources: SkillsUSA Leadership Handbook, PDP, PO Box 3000, Leesburg, VA 20177 “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”-Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
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1	1. Introduction: Basic Principles of Safety	<p>STD 2.0 Students will identify and demonstrate basic principles of safety procedures used in the construction industry.</p> <p><u>OBJECTIVES</u></p> <ul style="list-style-type: none"> • Identify responsibilities & personal characteristics of a professional craftsperson. • Explain the role that safety plays in the construction crafts. • Describe what job-site safety means. • Explain the appropriate safety precautions around common job-site hazards. • Demonstrate the use & care of appropriate personal protective equipment. • Follow safe procedures for lifting heavy objects. • Describe safe behavior on & around ladders & scaffolds. • Explain the importance of the HazCom (Hazard Communication Standard) requirements and MSDSs (Material Safety Data Sheets). • Describe fire prevention & fire-fighting techniques. • Define safe work procedures around electrical hazards. <p><u>TASK-ACTIVITY:</u> Inspect personal protective equipment to determine if it is safe to use. Examples: Safety goggles, hardhat, gloves, safety harness, safety shoes, etc.</p> <p><u>TASK-ACTIVITY:</u> Properly don & remove personal protective equipment.</p> <p><u>TASK-ACTIVITY:</u> Demonstrate safe lifting procedures.</p> <p><u>Resources:</u> SkillsUSA Leadership Handbook, PDP, PO Box 3000, Leesburg, VA 20177 “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”-Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio.) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. a. Accidents: Causes & Results	
1	3. b. Accidents: Causes & Results	
1	4. a. Construction Site Job Hazards	
1	5. b. Construction Site Job Hazards	
1	6. Working Safely With Job Hazards	
1	7. a. Personal Protective Equipment	
1	8. b. Personal Protective Equipment	
1	9. Lifting	
1	10. a. Aerial Work	
1	11. b. Aerial Work	
1	12. Hazard Communication Standard	
1	13. a. Fire Safety	
1	14. b. Fire Safety	
1	15. Electrical Safety	

1	1. Introduction: Interpret Drawings/Blueprints	STD 3.0 - INTRODUCTION TO DRAWINGS <u>OBJECTIVES</u> <ul style="list-style-type: none"> • Recognize & identify basic blueprint terms, components, & symbols. • Relate information on blueprints to actual locations on the print. • Recognize different classifications of drawings. • Interpret & use drawing dimensions. <u>TASK-ACTIVITY:</u> Answer questions concerning a specified floor plan, giving distances and locating specific features. <u>TASK-ACTIVITY:</u> Written test.
1	2. Introduction:	
1	Civil/Architectural/Structural/Mechanical/Plumbing/Electrical	
1	3. Components of the Blueprint	
1	4. Scale: Measuring Tools	
1	5. Scale: Engineer's Scale	
1	6. Scale: Architect's Scale	
1	7. Scale: Metric Scale	
1	8. Lines of Construction	
1	9. Abbreviations, Symbols, & Keynotes	
1	10. Dimensions	<u>Resources:</u> SkillsUSA Leadership Handbook, PDP, PO Box 3000, Leesburg, VA 20177 "From School to Work"-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois "Applied Communication Skills for the Construction Trades"-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com "Tools for Success"-Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio .) "Basic Technical Mathematics" – C. Thomas Olivo/Thomas P. Olivo "Basic Mechanical Drawing" Joseph J. Almon, M.A.

1	1. Introduction and History of Construction.	<p>STD 4.0 Students will trace the growth & development of the Construction industry. –</p> <p>Objectives:</p> <ul style="list-style-type: none"> Identify a few of the vast number of careers that are part of construction. Define construction and list major construction projects. Analyze the evolution of the construction industry. Analyze current cultural and economic indicators to anticipate future trends in the construction industry. Explore economic aspects, the free enterprise system, and the role of government as they relate to the construction industry. <p>Activity:</p> <ol style="list-style-type: none"> Compare and contrasts construction techniques used in previous centuries versus current methods. Analyze recent changes in the construction industry and describe the effects of the changes Identify key influences for change within the industry, which are based on society, cultural, educational, and economic trends. Collect and present information related to government agencies and legislation concerning the construction industry. Describe the effects of market factors on the construction industry. <p>Resources: “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. The Future of Construction and the Impact of Construction on Society.	
1	3. Relationship of Construction to Other Technology Systems – Manufacturing/ Communication/ Transportation	
1	4. Elements of Construction – Construction Safety / Management / Entrepreneurship	
1	5. Elements of Construction – Construction Designing / Surveying / Building Codes / Inspections	
1	6. Elements of Construction – Time Management / Scheduling / Scheduling Methods	
1	7. Application of Construction Systems – Foundation / Floor / Wall / Roof	
1	8. Application of Construction – Plumbing / Electrical / Heating, Ventilation, & Air Conditioning	

1	1. Transportation Construction – Roads / Pipelines / Water / Air /	<p>STD 5.0 Students will evaluate career opportunities and career paths within the construction industry.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Examine various fields of work and related occupations within the construction industry. • Explain the titles, roles, and functions of individuals engaged in construction careers, including opportunities for advancement. • Investigate employment and entrepreneurial opportunities. • Evaluate personal characteristics required for working in the construction industry. • Investigate post-secondary education, professional organizations, and trade publications appropriate for continuing education. <p><u>Activity:</u></p> <ol style="list-style-type: none"> 1. Research at least one field of work of interest in the construction industry and the related occupations. 2. Compare the roles and functions of people in construction careers. 3. Research and develop a projection of industry trends related to career opportunities. 4. Develop a personal career plan. 5. Research and present information on key individuals in the construction industry. <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Energy Related Construction – Mining / Oil Storage / Hydroelectric Dams	
1	3. Communications Construction – Road Signs / Billboards / Satellites	
1	4. Building Construction – Residential / Commercial	
1	5. Site Evaluation and Preparation – Ground Water / Environmental Studies	

1	1. Safety, Use of Hammers; Screwdrivers; Sledgehammers; Ripping Bars and Nail Pullers; Wrenches.	<p>STD 6.0 Students will identify, select, inspect, safely use, maintain, and store hand tools.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Recognize & identify some of the basic hand tools used in the construction trade. • Use these tools safely. • Describe the basic procedures for taking care of these tools. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Visually inspect following tools to determine if they are safe to use: Hammer, Screwdriver, Saw. 2. Safely & properly use the following tools: Hammer (to drive & pull nails), Screwdriver (slotted or Phillips), Adjustable wrench, Channellock pliers, Spirit level, Carpenter's square, Steel rule, Steel tape, Saw, Clamp. <p><u>Resources:</u> "From School to Work"-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois "Applied Communication Skills for the Construction Trades"-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com "Tools for Success"- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; "Construction Systems" Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) "Basic Technical Mathematics" – C. Thomas Olivo/Thomas P. Olivo "Basic Mechanical Drawing" Joseph J. Almon, M.A.</p>
1	2. Hammers – Claw, Ball Peen, Safety & Maintenance	
1	3. Screwdrivers – Uses, Safety & Maintenance	
1	4. Sledgehammers – Uses, Safety & Maintenance	
1	5. Ripping Bars & Nail Pullers – Uses, Safety & Maintenance	
1	6. Wrenches – Nonadjustable, Adjustable, Safety & Maintenance	
1	7. Pliers & Wire Cutters – Slip-Joint, Long-Nose, Lineman, Channellock, Vise-Grip, Safety & Maintenance	
1	8. Levels – Uses, Safety & maintenance	
1	9. Squares – Carpenter's Square, Combination Square, Safety & Maintenance	

1	1. Safety, Use of Power Tools	<p>STD 7.0 Students will identify, select, inspect, safely use, maintain, and store power tools.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Identify commonly used power tools of the construction trade. • Use power tools safely. • Explain how to maintain power tools properly. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Safely and properly operate an electric drill. 2. Safely and properly operate a circular saw. 3. Safely and properly operate a bench grinder. 4. Safely and properly operate a portable belt sander. 5. Safely and properly operate a pneumatically powered nailer (nail gun). <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Types of Power Drills	
1	3. Electric Drills	
1	4. Cordless Drills	
1	5. Hammer Drills	
1	6. Electromagnetic Drills	
1	7. Pneumatic Drills	
1	8. Types of Power Saws	
1	9. Circular Saws	
1	10.Saber Saws (Jigsaws)	
1	11.Reciprocating Saws	
1	12.Portable Bandsaws	
1	13.Grinders and Sanders	
1	14.Angle, End, and Detail Grinders	
1	15.Bench Grinders & Portable Belt Sanders	
1	16.Random Orbital Sanders	
1	17.Nail Guns	
1	18.Pavement Breakers & Hydraulic Jacks	

1	1. Principles of Linear Measurement	<p>STD 8.0 Students will make and lay out linear and angular measurements.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Make accurate linear measurements. • Make accurate angular measurements. • Make accurate two-dimensional layouts specified with linear and angular dimensions. • Make accurate three-dimensional layouts specified with linear and angular dimensions. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Use steel tape & square to lay out cuts in framing lumber to an accuracy of 1/16 inch. 2. Make horizontal site layout measurements over 100 feet to an accuracy of 1/8 inch using a steel tape and plumb bob. 3. Make small linear measurements, such as wire diameter, to an accuracy of .001 inch. 4. Lay out locations of walls, windows, doors, and other structural elements specified in two dimensions. 5. Lay out curvilinear boundaries, such as for driveways and patios specified in two dimensions. 6. Lay out site locations and elevations specified in three dimensions. <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Principles of Angular and Circular Measurement	
1	3. Principles of Surface Measurement	
1	4. Principles of Volume Measurement	
1	5. The Concepts of Lines, Angles, and Circles	
1	6. Basic Flat Shapes	
1	7. Basic Solid Shapes	
1	8. Congruent and Symmetrical Plane and Solid Geometric Shapes	
1	9. Basic Geometric Constructions	
1	10. Right Triangle Trigonometry	
1	11. Applications of Tables of Trigonometric Functions	
1	12. Acute/Oblique Triangles	
1	13. Application of Formulas to Plane and Solid Geometric Forms	
1	14. Application of Formulas to Plane and Solid Circular Forms	

1	1. Formulas Applied to Geometric Forms – Application of Formulas to Plane and Solid Geometric Forms (Overview)	<p>STD 9.0 Students will transfer mathematics concepts to solve problems encountered in the construction industry.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Apply geometric and algebraic concepts to calculations of areas and volumes from construction drawings. • Apply rate-of-change concepts to construction problems. • Estimate error propagation in calculations due to uncertainty in measurements • Analyze the effect of interest rates on the cost of construction. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Calculate & estimate areas of irregular polygon and surface with complex curved boundaries. 2. Calculate & estimate volume of structural element having regular & irregular geometric shapes. 3. Calculate the length of roof rafters from span & slope data. 4. Estimate the impact of lost time on total cost of a construction loan. 5. Calculate the interest cost of a construction loan at current rates. 6. Compare a contractor cost-of-operating money based on a pay-on-completion contract versus a specific draw-on-progress contract. <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) .) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Developing Formulas for Square Objects	
1	3. Developing Formulas for Rectangular Polygons	
1	4. Formulas – Circular Geometric Solids	
1	5. Formulas – Lateral & Surface Areas & Volumes of Regular Cones & Pyramids	
1	6. Mathematics Applied in Money Management & Budgeting	
1	7. Setting Up a Budget (Money)	
1	8. Setting Up a Budget (Time)	
1	9. Mathematics Applied to Purchasing Goods & Credit Financing	
1	10. Applying Single & Multiple (Successive) Discounts	
1	11. The Cost of Credit	

1	12.Taxes – Self-Employment/Withholding/Federal/State/Local	<p>CONT. STD 9.0 Students will transfer mathematics concepts to solve problems encountered in the construction industry.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Apply geometric and algebraic concepts to calculations of areas and volumes from construction drawings. • Apply rate-of-change concepts to construction problems. • Estimate error propagation in calculations due to uncertainty in measurements • Analyze the effect of interest rates on the cost of construction. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Calculate & estimate areas of irregular polygon and surface with complex curved boundaries. 2. Calculate & estimate volume of structural element having regular & irregular geometric shapes. 3. Calculate the length of roof rafters from span & slope data. 4. Estimate the impact of lost time on total cost of a construction loan. 5. Calculate the interest cost of a construction loan at current rates. 6. Compare a contractor cost-of-operating money based on a pay-on-completion contract versus a specific draw-on-progress contract <p>Resources: “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	13.Construction Loans - Principle	
1	14.Construction Loans – Interest – Insurance – Taxes	
1	15.Construction Loans – Time Line/Delays/Weather/ Penalties	

1	1. Overview of Rigging	<p>STD 10.0 Students will rig and move materials and equipment.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Inspect rigging equipment. • Analyze crane hand signals. • Estimate size, weight, and center of gravity. • Demonstrate tying common knots used for rigging operations. • Evaluate various wire rope slings used for rigging operations • Various types of derricks. • Analyze types of cranes. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Select and inspect appropriate slings for a lift. 2. Identify and determine the use of each piece of rigging equipment. 3. Demonstrate finding the center of gravity of an object. 4. Demonstrate ways to estimate the weight of an object. 5. Compare and contrast various types of derricks. 6. Compare hydraulic crane to mechanical crane. <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Synthetic Slings	
1	3. Alloy Steel Chain Slings	
1	4. Wire Rope Slings	
1	5. Hitches	
1	6. Rigging Hardware	
1	7. Sling Stress	
1	8. Hoists	
1	9. Rated Capacity – Sling Attachment/Sling Safety/ Hardware Attachment	
1	10. Load Control – ANSI Hand Signals/Load-Handling Safety	

1	1. Basic Drafting Skills (Overview)	<p>STD 11.0 Students will demonstrate proficiency in creating two- and three-dimensional scale drawings.</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Create accurate and complete manual scale drawings of two- dimensional objects and two-dimensional plans. • Apply drawing dimensioning rules using basic measurement systems. • Create complete orthographic projections of simple three-dimensional objects. • Analyze the use of a computer-aided drafting software program to draw two- and three-dimensional objects.. <p><u>Activity:</u> (Performance Objectives)</p> <ol style="list-style-type: none"> 1. Make scale drawing of given two-dimensional objects, including floor plans and equipment. 2. Create and complete title block. 3. Apply dimensioning rules. 4. Use basic measurement systems. 5. Make orthographic pencil drawings of complex objects, including auxiliary and sectional views. <p><u>Resources:</u> “From School to Work”-JJ Littrell/Annie Hunter Clasen/Peggy Pearson; “The Goodheart-Willcox Company, Inc.; Tinley Park, Illinois “Applied Communication Skills for the Construction Trades”-Steven A. Rigolosi; Upper Saddle River, New Jersey; Columbus, Ohio www.nccer.org www.crafttraining.com www.prenhall.com “Tools for Success”- Steven A. Rigolosi, Upper Saddle River, New Jersey; Columbus, Ohio; “Construction Systems” Doug Polette/Jack Landers (Goodheart-Willcox Company, Inc.) “Basic Technical Mathematics” – C. Thomas Olivo/Thomas P. Olivo “Basic Mechanical Drawing” Joseph J. Almon, M.A.</p>
1	2. Making the Drawing – Centering the Drawing/Front View/Top View/End View	
1	3. Orthographic Projections – Visualize Basic Drawings	
1	4. Dimensioning	
1	5. Scale Drawing	
1	6. Pictorial Drawings	
1	7. Dimensioning Pictorial Drawings	
1	8. Section Drawing	
1	9. Auxiliary Views	
1	10.Assembly Drawing and Detail Drawing	